

1/11

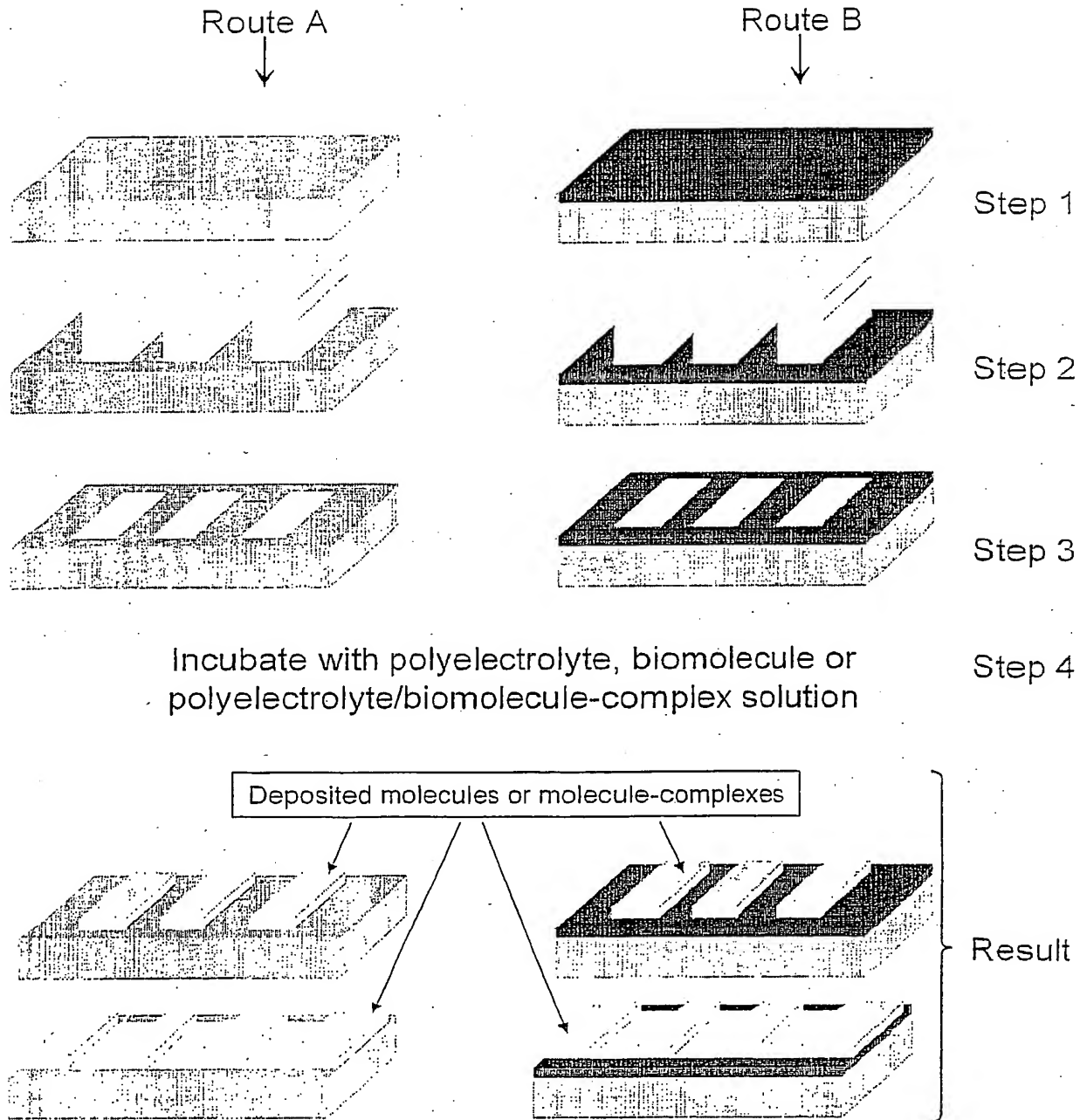
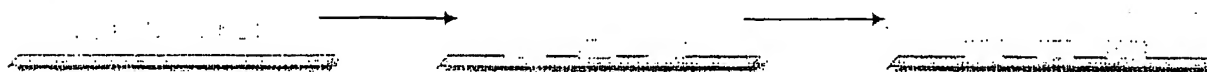


Fig. 1

BEST AVAILABLE COPY

2/11

A: μ CP – micro Contact Printing



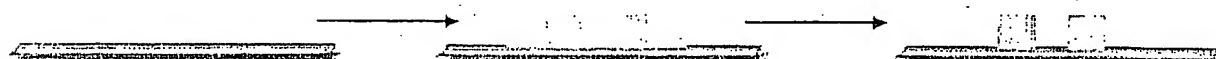
B: REM – Replica Molding



C: μ TM – micro Transfer Molding



D: MIMIC – Micro Molding in Capillaries



E: SAMIM – Solvent Assisted Micro Molding



Fig. 2

3/11

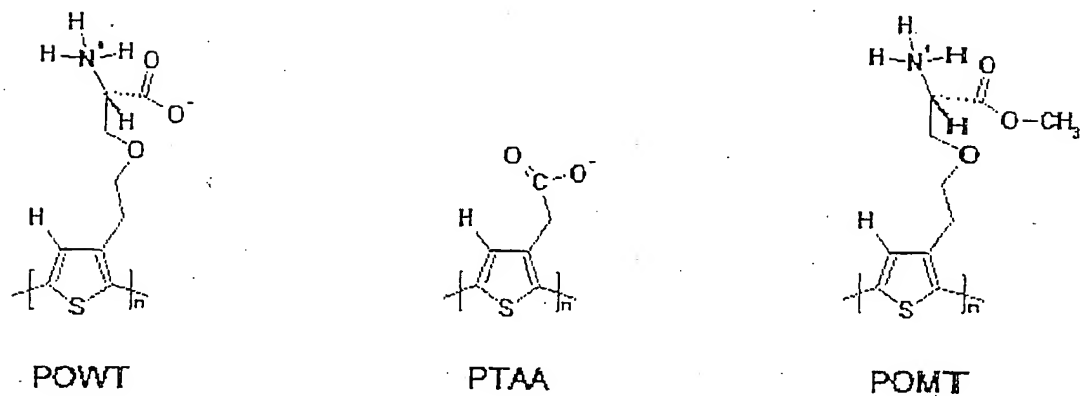


Fig. 3

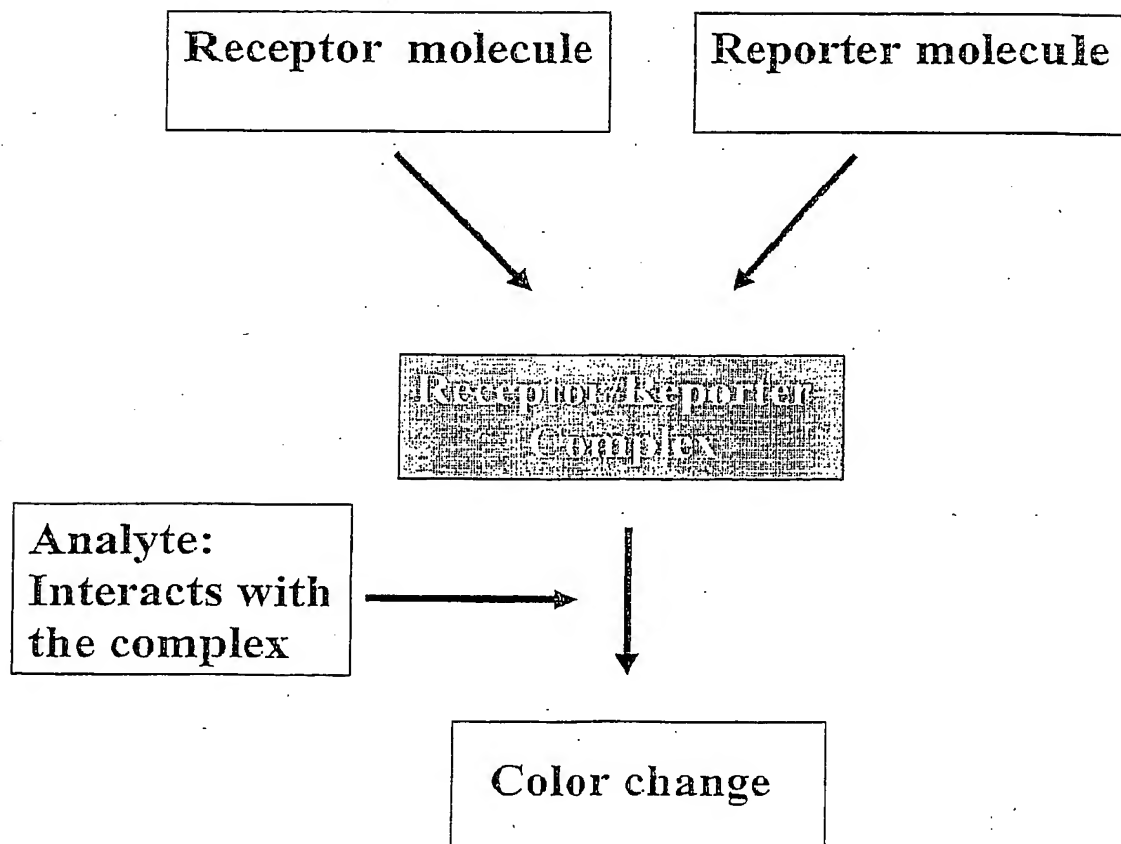


Fig. 4

BEST AVAILABLE COPY

4/11

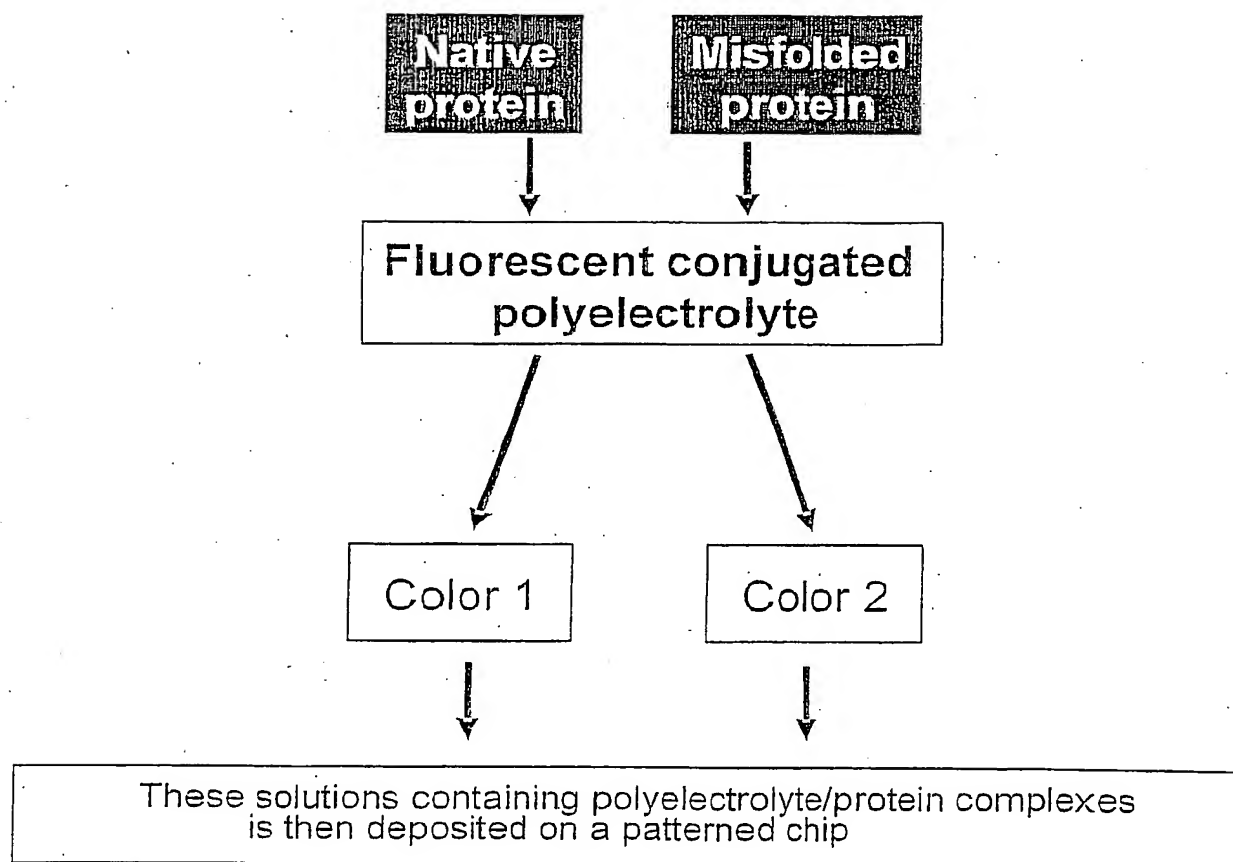
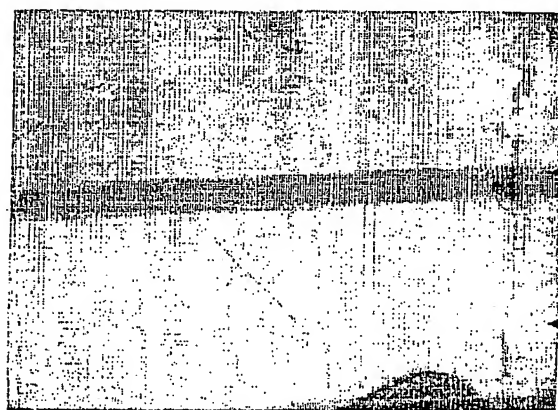


Fig. 5

BEST AVAILABLE COPY

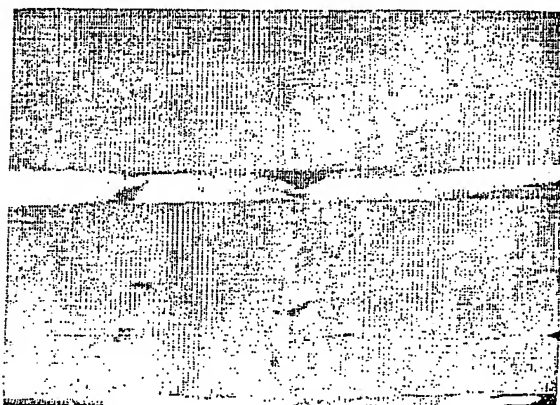
5/11



POWT was dissolved in pure water

Hydrophilic area:
POWT in pure water solution
does not stain this area

Hydrophobic area:
POWT in water solution stains
this area only



POWT was dissolved in 20% water/80% methanol

Hydrophilic area:
POWT in water(20%) / methanol (80%)
solution stains this area in red

Hydrophobic area:
POWT in water(20%) / methanol (80%)
solution stains this area in green

Fig. 6

BEST AVAILABLE COPY

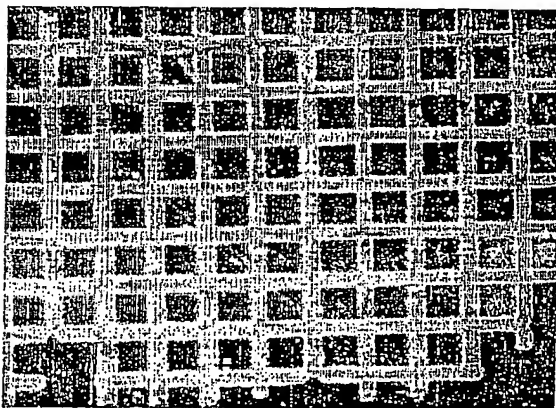
6/11



Hydrophilic area:
POWT/ssDNA complex in phosphate buffer solution stains this area

Hydrophobic area:
POWT/ssDNA complex in phosphate buffer solution does not stain this area particularly good

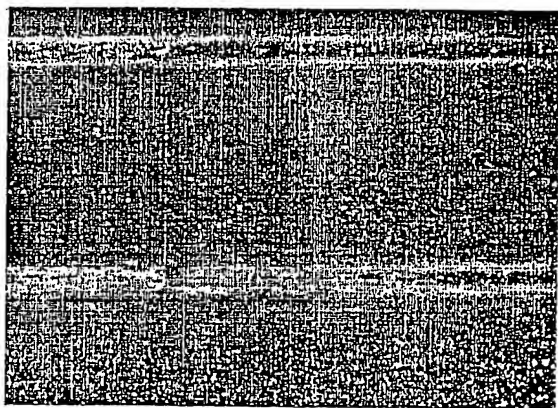
Pattern obtained from POWT/ssDNA-complex dissolved in phosphate buffer.



Same as above but with a different hydrophobic pattern on the hydrophilic substrate.

The squares are hydrophobic and the surrounding area is hydrophilic.

Pattern obtained from POWT/ssDNA-complex dissolved in phosphate buffer.

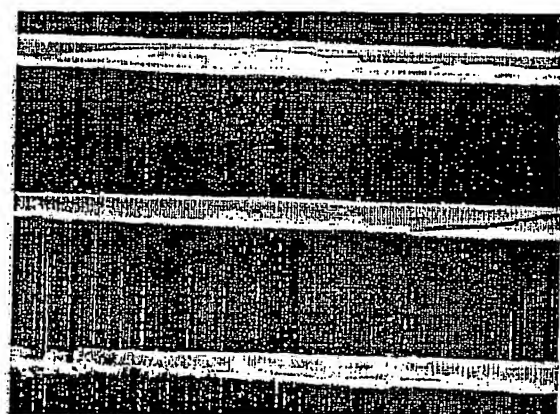


Hydrophilic area:
POWT/dsDNA complex in phosphate buffer solution stains this area

Hydrophobic area:
POWT/dsDNA complex in phosphate buffer solution does not stain this area particularly good

Pattern obtained from POWT/dsDNA-complex dissolved in phosphate buffer.

7/11

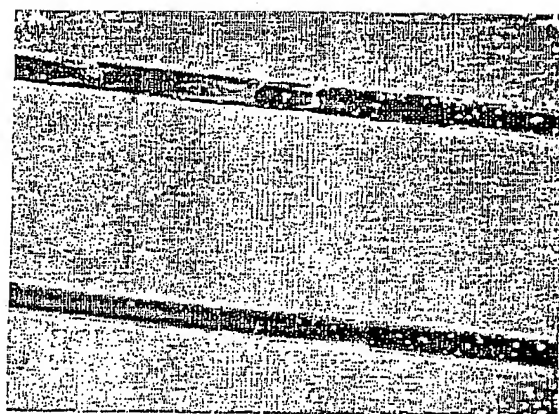


Hydrophilic area:

POWT/poly-Glutamic acid complex in phosphate buffer solution stains this area

Hydrophobic area:

POWT/poly-Glutamic acid complex in phosphate buffer solution does not stain this area



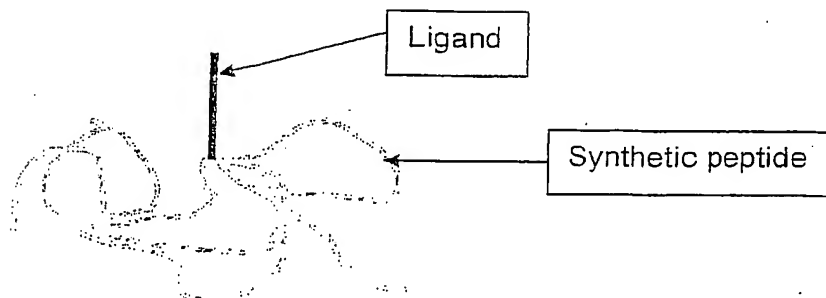
Hydrophilic area:

POWT/poly-Lysine complex in phosphate buffer solution stains this area

Hydrophobic area:

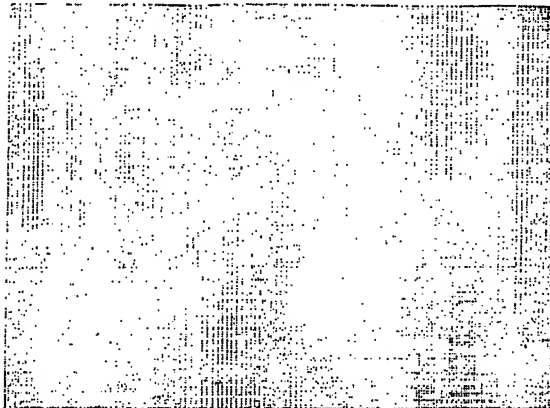
POWT/poly-Lysine complex in phosphate buffer solution does not stain this area

Fig. 8



These two examples of synthetic peptides can be synthesized with ligands that can bind to a biomolecule of choice.

8/11



Route B:

POWT in pure water was coated on a clean substrate and then modified with PDMS stamp with a relief structure. The modified areas that the patterned stamp creates cannot be seen before incubation with a molecule that binds to either area.



Modified area:

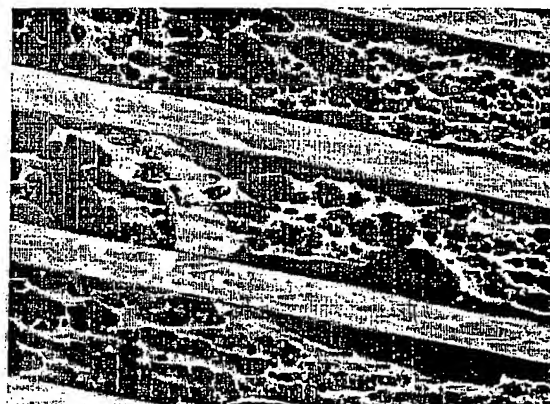
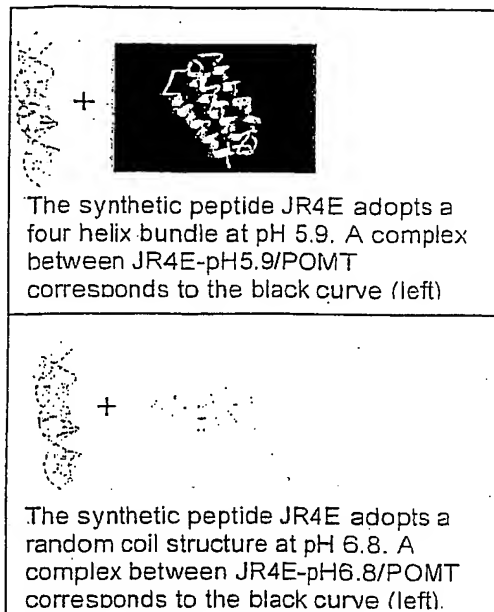
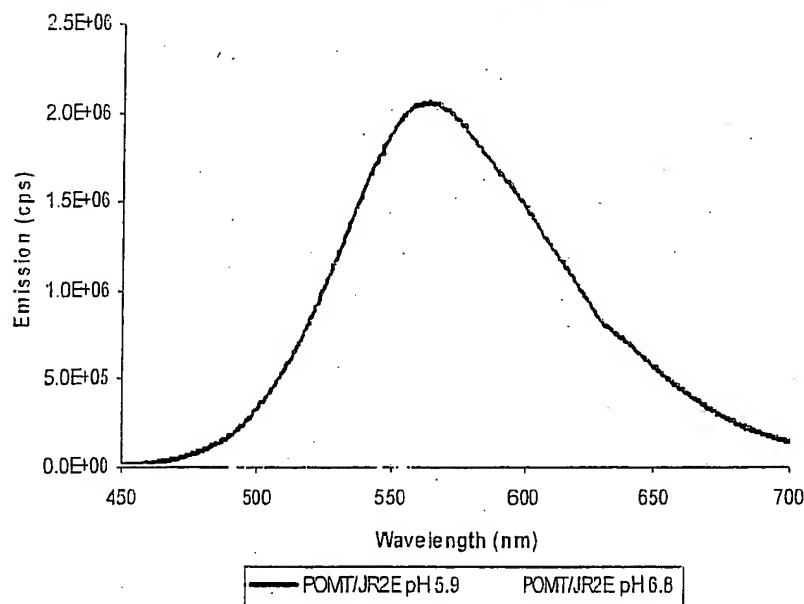
ssDNA in phosphate buffer binds to the modified area

Unmodified area:

ssDNA in phosphate buffer does not bind to the this area

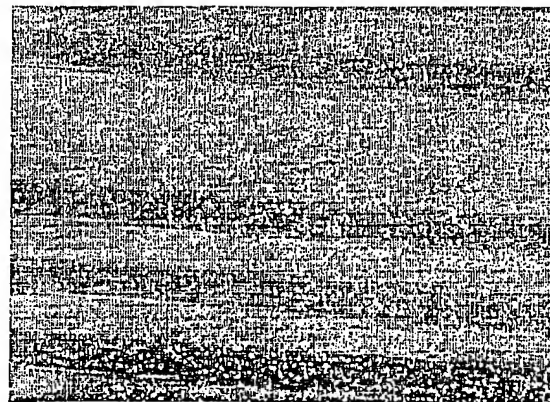
Fig. 9

9/11



Hydrophobic area:
 POMT/JR4E-pH5.9 complex in phosphate buffer solution does not stain this area

Hydrophilic area:
 POMT/JR4E-pH5.9 complex in phosphate buffer solution stains this area in green color



Hydrophobic area:
 POMT/JR4E-pH6.8 complex in phosphate buffer solution stains this area in orange color

Hydrophilic area:
 POMT/JR4E-pH6.8 complex in phosphate buffer solution does not stain this area

Fig. 10

10/11

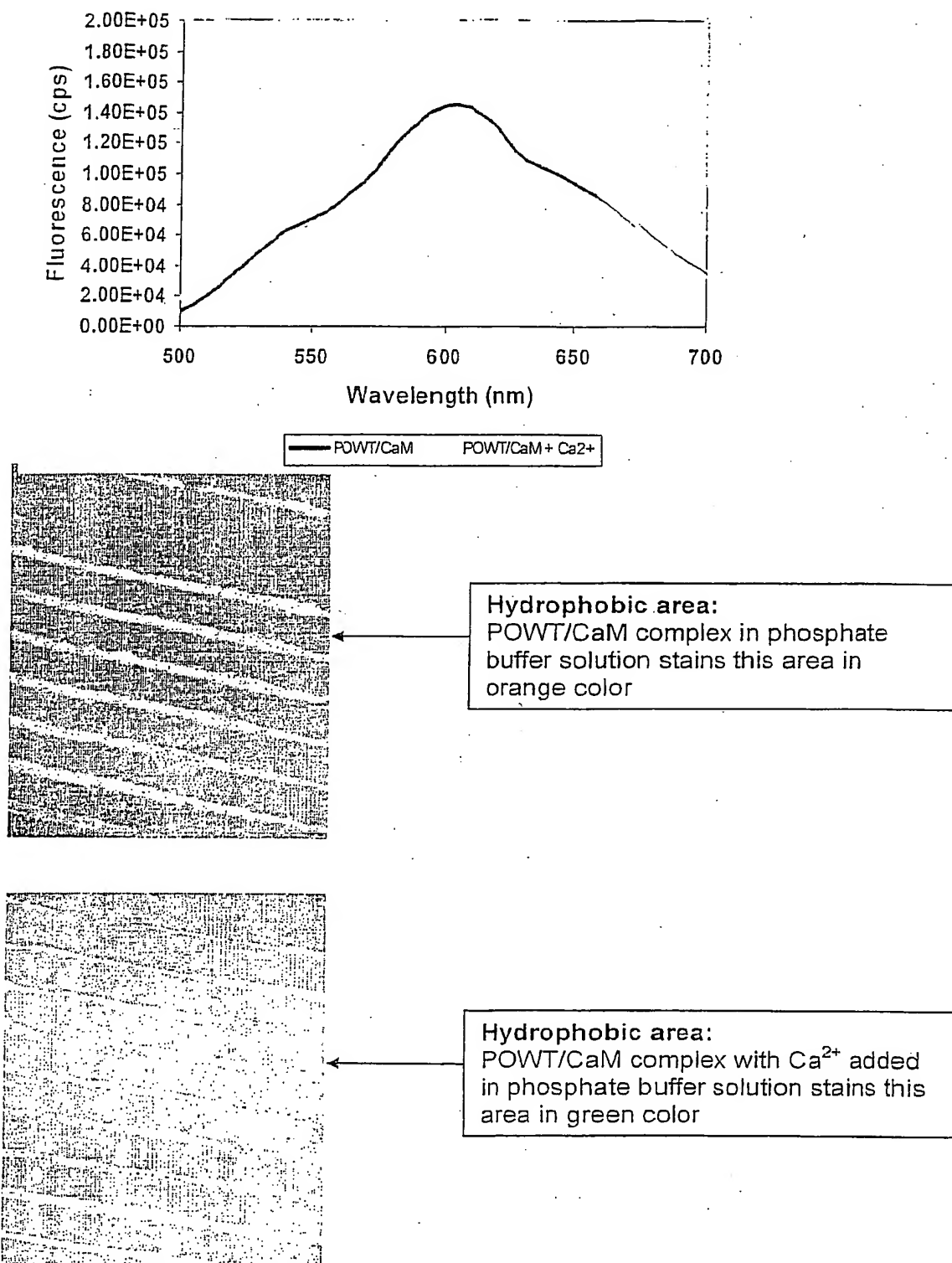
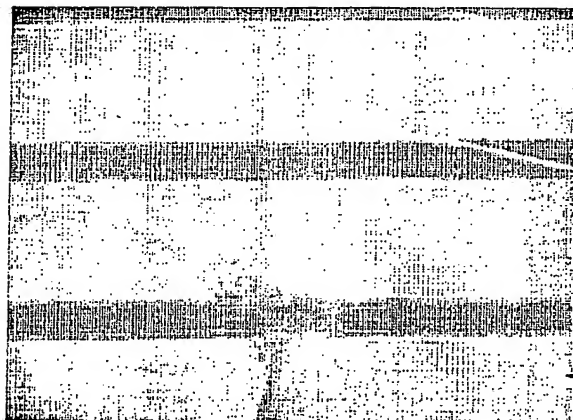


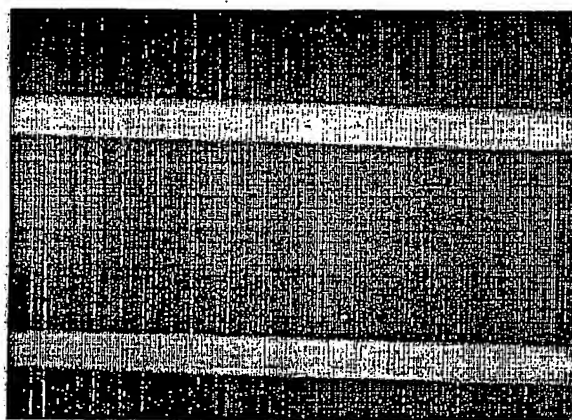
Fig. 11

11/11



Hydrophilic area:
PTAA/Insulin complex in phosphate buffer solution does not stain this area.

Hydrophobic area:
PTAA/Insulin complex in phosphate buffer solution stains this area.



Hydrophilic area:
POMT/Insulin complex in phosphate buffer solution stains this area.

Hydrophobic area:
POMT/Insulin complex in phosphate buffer solution does not stain this area.

Fig. 12